

ABSTRACT OF THE DISCLOSURE

A trench isolation in a semiconductor device, and a method for fabricating the same, includes: forming a trench having inner sidewalls for device isolation in a silicon substrate; forming an oxide layer on a surface of the silicon substrate that forms the inner sidewalls of the trench; supplying healing elements to the silicon substrate to remove dangling bonds; and filling the trench with a device isolation layer, thereby forming the trench isolation without dangling bonds causing electrical charge traps.